

BENCHMARKS

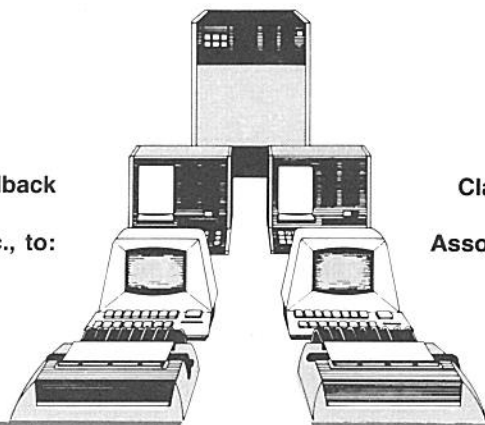
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BENCHMARKS Reader/User feedback is encouraged.

Send all letters, suggestions, etc., to:
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SERVICES AVAILABLE TO USERS OF THE NTSU COMPUTING FACILITIES

The NTSU Computing Center is located in the Information Sciences Building (ISB), Room 119. Phone Numbers:
Computing Center: (817) 565-2324; Help Desk: 565-4050; Graphics Lab: 565-3479

Benchmarks Questions/Contributions, Etc. -Claudia Lynch
Information & ID-Codes; Disk Space Problems -Carolyn Goodman

Statistical/Research Support -George Morrow, Scott Barber
Claudia Lynch, Rocky Ward, Panu Sittiwong

Academic ADABAS/COM-PILETE; CRSP & COMPUSTAT Problems -Telka Clem

Student Programming Problems -CSCI Dept., GAB Room 542A; BCIS Dept., BA Room 152

JCL Problems; Password&Operating System Problems; Communication/Terminal Problems -Help Desk

Data Entry; Test Scoring & Analysis -Betty Grise

Administrative Applications -Coy Hoggard

Printout Retrieval -RJE Operators

DIALING UP NTSU COMPUTERS OVER THE TELEPHONE

Phone numbers for the Local Area Network (LAN) are:

300/1200 BAUD: (817) 565-3300; 3499

300 BAUD: D/FW METRO 429-6006

1200 BAUD: D/FW METRO 429-9314

The numbers that will accept either 300 or 1200 baud communications have an autobaud feature that requires you to hit the {RETURN} key repeatedly so that the receiving modem can determine the appropriate baud rate. When you have established a communications link, the # prompt will appear on your screen and you can enter one of following CALL commands to connect with the computer of your choice.

CALL 8040 connects with the NAS/8083 (does not support full-screen editing)

CALL 3270 connects with the NAS/8083 through a 3270 protocol converter (supports full screen editing).

CALL DEC connects with the VAXcluster

CALL 780 connects with the Research VAX

CALL 2000 connects with the HP-2000

NTSU CABLE SYSTEM SCHEDULE

The current configuration of the NTSU cable system is as follows:

Channel 7-NT Daily. Broadcasts from the NTSU Journalism Department.

Channel 8-TAGER. Broadcasts go to and from NTSU to other links in this microwave network.

Channel 10-NTSU Computer System Status Monitor

(SSM). Displays the current status of the NAS, VAX and HP computer systems supported by the Computing Center.

Channel 12-Sammons Cable. Carries Cable News Network (CNN) unless a special program is requested.

Special broadcasts to and from classrooms can be arranged by the Media Library (565-2484).

HOURS FOR NTSU COMPUTER ACCESS AREAS: SPRING 1987*

Days	Times	Location
Sunday	2-10 p.m.	ISB 110 Terminal Area
	Noon-Midnight	Computing Center RJE
	2:15-10 p.m.	GAB 550C
Saturday, Sunday	Noon-11:45 p.m.	College of Business
	Noon-5 p.m.	Graphics Lab
	7:00 a.m.-Midnight	Computing Center RJE
Monday	7:00 a.m.-Open 24 hrs/day	Computing Center RJE
Tuesday-Saturday	7:30 a.m.-Midnight	ISB 110 Terminal Area
Monday-Thursday	8:15 a.m.-11:45 p.m.	College of Business
	8:15 a.m.-Midnight	GAB 550C
	8 a.m.-10 p.m.	Graphics Lab
Friday	7:30 a.m.-6 p.m.	ISB 110 Terminal Area
	8:15 a.m.-7:45 p.m.	College of Business
	8:15 a.m.-5 p.m.	GAB 550C
Saturday	8 a.m.-6 p.m.	Graphics Lab
	9 a.m.-6 p.m.	ISB 110 Terminal Area
	CLOSE Midnight	Computing Center RJE
	12:15 p.m.-5 p.m.	GAB 550C

* Hours may vary. Check MUSIC/VAX News and/or posted schedules for exceptions.

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NEW POLICIES, PROCEDURES AND OTHER IMPORTANT STUFF

New MUSIC Manual Available

By Philip C. Baczewski, MUSIC/SP Timeshare Coordinator (AC12@NTSMUSIC)

The *MUSIC/SP User's Reference Guide* for Release 1.1 of MUSIC is now available for purchase at The University Store (located in the NTSU Union building). This new MUSIC manual, though priced the same as the one it replaces (\$13.25), contains additional information needed to fully exploit the enhancements found in MUSIC/SP R1.1, as well as a whole chapter devoted to the use of MUSIC at NTSU. Local editing and publishing of the manual enabled the inclusion of information specific to our site and allowed the manual's relatively low price (the same manual purchased from IBM costs \$46.00).

The new MUSIC User's Guide contains documentation of new features found in Release 1.1, including terminal session recording, interfacing REXX with PANEL, file encryption, and expanded and reorganized documentation of PCWS (Personal Computer Work Station). As in the previous edition of the MUSIC User's Guide, PCWS is discussed in Chapter 4, "Using Terminals," as well as in Chapter 12, "Subsystems." Chapter 12 now includes a discussion of the PCWS EXEC facility. This facility allows a user to create EXEC files which can potentially automate almost any communication procedure.

New to the MUSIC/SP User's Guide is a customized Chapter 3, entitled "Our Facilities," containing information on various subjects specific to NTSU's use of MUSIC. There is a step by step description of logging on to MUSIC through the Local-Area Network, a listing of telephone numbers for dial-up access and telephone numbers for help information, and an overview of the computer hardware configuration as it relates to MUSIC (including model numbers and capacities). Also found in this chapter are a listing of terminal types supported for asynchronous communication ("CALLing" 8040), statements of backup policy and policy regarding misuse of computing facilities, and references to other sources of information and help.

The MUSIC/SP User's Reference Guide is recommended for anyone making heavy use of MUSIC and its facilities. It is especially helpful for those user's wanting to exploit advanced editing features, MUSIC subsystems, or the compilers and loaders available under MUSIC. Look for this manual in the textbook section of the University Store.

Tips for Using the MUSIC MEMO Facility

By Philip C. Baczewski, MUSIC/SP Timeshare Coordinator (AC12@NTSMUSIC)

The MUSIC/SP memo facility can provide easy communication with other users of MUSIC, or with users of systems other than MUSIC (remote systems). To use the memo facility, simply type MEMO from MUSIC *GO mode. You are then prompted to either enter the ID code for the receiver of the memo, or to get helpful information on the use of the memo facility. The following tips are intended to help you use memo even more easily and efficiently:

- The quickest way to send a memo is to type **MEMO TO(code)** or **MEMO TO(code(systemid))**, where *code* is any valid ID code, and *systemid* is any valid remote system name (RSCS node name). On the same line, you may also type **SAVE(filename)** to save the memo in a specified file and/or **NOACK** to prevent receiving acknowledgement of that memo. Once you enter the memo command and options as described above, you will then immediately be able to enter your memo text.
- When a memo has been sent to your MUSIC ID, you will receive the following message when you log on: Memo waiting. Type MEMO to read it. The quickest way to read your memo(s) is to type **MEMO G** from *GO mode. You will then be shown acknowledgements (if any) of memos you sent, and/or any memos sent to you.
- Once a memo to you has been displayed, you are given several options. Memos can be saved in a specified file by using the **F** (file) option. They can then be removed from your "mailbox" by using the

PU (purge) option. The quickest way to file and purge your memos is by combining these two options: typing **FP** will save your memo in a file called "OLDMEMO" and then remove the memo from your mailbox.

- It is very important that you purge your memos once they have been read and/or filed. If you leave memos in your mailbox, it may become full and prevent new memos from being sent to you. (Your Mailbox left untended, will gobble up valuable save library space as well.) NOTE: It is especially important that if you frequently receive mail through BitNet, that you read, file (if desired), and purge mail DAILY. Failure to read and purge your BitNet mail on a regular basis can cause your mailbox to become full, cause messages to be "backed up" waiting to get into your mailbox, and possibly prevent you from reading any of your memos.
- The answer (A) option given after a memo has been displayed will work correctly only with memos sent locally on MUSIC. (We have requested that future versions of MEMO allow this feature for remote systems.) If you are using MEMO to correspond with someone at a remote system ID, be sure to send a separate memo as an answer. Also, be sure your correspondent is aware that they should reply with a separate memo specifying your code and system ID. In such cases, failure to specify code and system ID could prevent memos to remote systems from reaching their destination, or prevent memos sent from remote systems from reaching you.

These tips are not intended to replace basic information about using MUSIC MEMO. If you wish further information, type **HELP MEMO** at MUSIC *GO mode, or read the help information provided as part of the memo facility (once in MEMO, type **HELP** if you are using 8040 line mode or press { PF1} if you are using 3270 full-screen mode).

New Version of SPSS^x

Release 2.2 of SPSS^x, which was discussed in the January/February, 1987 issue of *Benchmarks*, has been installed and is available for testing by inserting the line: **// EXEC SPSSX22** in your JCL. It will become the production version of SPSS^x between the Spring and Summer Sessions. In addition to the exciting new features that were discussed in the aforementioned *Benchmarks* article, you will also be able to produce "camera ready" tables on the HP Model 2680A Laser Printer. This is not a new feature of SPSS^x, but rather an implementation of some modifications done to the Laser Printer environments (see related article below) by Lynne Rutherford, Computer Operations Supervisor. SPSS^x, Version 2.2, has also been installed so that it will output both upper and lower case letters, provided the text was input in that manner and the output device supports upper and lower case printing.

No action is required by a user of SPSS^x 2.2 in order to get quality tables printed on the Laser Printer using the SPSS^x TABLES Procedure. However, should you wish to produce "camera ready" tables with other procedures such as CROSSTABS, you will need to insert a SET BOX command at the beginning of your SPSS^x commands. The command should look like this: **SET BOX=X'4746534542444352514849'** This tells SPSS^x the appropriate HEX codes to use for the PN01* print environment on the Laser Printer. Do not be alarmed when viewing your "camera ready" tables on your PC or CRT before printing them out. They will not appear correctly because they are non-standard EBCDIC characters which are not displayable by a standard terminal. It should be noted that if you route a job in which you have used the SET BOX command described above to an impact printer, such as REMOTE3 or BA (REMOTE1), the tables will have borders consisting of letters of the alphabet. If you have not used the SET BOX command but want to use an impact printer to look at your TABLES output, you can use the TABLES command: **BOXCHAR=SYSTEM**. This will cause the "normal" border consisting of -+I to be used when printing your tables. If you neglect to use the **BOXCHAR=SYSTEM** command and route your TABLES output to an impact printer, the border of the boxes will consist of letters of the alphabet.

*It is also possible to use the TN01 and TNS1 print environments to print quality tables. To access these environments, examine the SPSS^x Version 2.2 PROC (get a printout and look at the JCL portion), and insert exact copies of the lines containing references to the PN01 print environment after the **//EXEC SPSSX22** line in your JCL. Change PN01 to TN01 or TNS1, depending on your preference.

Changes in the Print Environments on the Laser Printer

Changes to the ALA Printing Environment

The ALA environment available on the HP Model 2680A Laser Printer contains special characters which were previously available only by using the ALA train, on an impact printer. To call this print environment, include either ALA1, ALA2, ALA3, or ALA4 in the DD statement in your JCL (depending on number of copies needed).

General characteristics of this ALA environment are the same as in TN01 - 10 characters per inch, 90 degree rotation, 77 characters per line, 66 lines per page, and Standard "Courier" style characters. To get a single copy of output in the ALA environment, the DD statement should read:

```
//SYSPRINT DD SYSOUT=(A,,ALA1)
```

To access this environment you can use Waterloo/SCRIPT or MUSIC/SCRIPT. Both have a "translate" feature (.TR) which allows you to substitute a character on your keyboard for one that is available on the printer. (Consult the Waterloo/SCRIPT Reference Manual or the MUSIC/SCRIPT User's guide for more information on the .TR command). It is also possible to obtain the desired characters by defining your input as HEX and typing in the appropriate hexadecimal equivalent for the character. To print a character such as an acute accent which goes over a letter, use the .tr command to define a character on your keyboard as a backspace character. The hex code for backspace is 16. For example:

.tr % 16	defines % as the backspace character
.tr \$ 74	defines \$ as 74 (HEX code for acute accent)
French for 'debat' is 'de%\$bat'.	Input text.
French for 'debate' is 'débat'.	Printed Output

An effort was made to create the new characters with the same HEX code as had been used with the ALA train on the impact printer. In the case of the musical flat, this was not possible. This character was called by HEX 41 on the ALA train, and must be called by HEX 9B in the ALA1 environment.

Modified Laser Print Environments

ALA1

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F	
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7-	•	ˆ	ˆ	ˆ	ˆ	ˆ	ˆ	ˆ	ˆ	ˆ	:	#	@	'	=	"	7-
8-	o	a	b	c	d	e	f	g	h	i	ˆ	ı	<	(	+	-	8-
9-	■	j	k	l	m	n	o	p	q	r	ı	b	n	)	±	■	9-
A-	ˆ	ˆ	s	t	u	v	w	x	y	z	α	β	γ	[	ˆ	●	A-
B-	o	1	2	3	4	5	6	7	8	9	■	■	(	]	=	-	B-
C-	{	A	B	C	D	E	F	G	H	I	+	-	)	■	ˆ	ˆ	C-
D-	)	J	K	L	M	N	O	P	Q	R	■	£	■	■	.	..	D-
E-	\		S	T	U	V	W	X	Y	Z	.	-	■	.	.	-	E-
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PN01

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F		
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8-	■	a	b	c	d	e	f	g	h	i	■	■	■	■	■	■	■	8-
9-	■	j	k	l	m	n	o	p	q	r	■	■	■	■	■	■	■	9-
A-	■	~	s	t	u	v	w	x	y	z	■	■	■	■	■	■	■	A-
B-	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	B-
C-	{	A	B	C	D	E	F	G	H	I	■	■	■	■	■	■	■	C-
D-	}	J	K	L	M	N	O	P	Q	R	■	■	■	■	■	■	■	D-
E-	\		S	T	U	V	W	X	Y	Z	■	■	■	■	■	■	■	E-
F-	0	1	2	3	4	5	6	7	8	9	■	■	■	■	■	■	■	F-

TN01

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F		
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8-	■	a	b	c	d	e	f	g	h	i	■	■	<	<	+	†	8-	
9-	■	j	k	l	m	n	o	p	q	r	■	■	n	)	±	■	9-	
A-	-	°	s	t	u	v	w	x	y	z	■	L	r	[	>	●	A-	
B-	°	1	2	3	4	5	6	7	8	9	■	J	7	]	=	-	B-	
C-	{	A	B	C	D	E	F	G	H	I	■	■	■	■	■	■	C-	
D-	}	J	K	L	M	N	O	P	Q	R	■	■	■	■	■	■	D-	
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F-	0	1	2	3	4	5	6	7	8	9	■	■	■	■	■	■	F-	

TNS1

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F		
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1-																	1-	
2-																	2-	
3-																	3-	
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8- ■	a	b	c	d	e	f	g	h	i	■	■	≤	<	+	+	8-		
9- ■	j	k	l	m	n	o	p	q	r	■	■	π	>	±	■	9-		
A- -	°	s	t	u	v	w	x	y	z	■	■	ℓ	r	[	λ	°	A-	
B- °	1	2	3	4	5	6	7	8	9	■	■	1	2	3	4	B-		
C- {	A	B	C	D	E	F	G	H	I	■	■	■	■	■	■	C-		
D- }	J	K	L	M	N	O	P	Q	R	■	■	■	■	■	■	D-		
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F- 0	1	2	3	4	5	6	7	8	9	■	■	■	■	■	■	F-		

"Using PHOENIX Library" Available

NTSU has acquired the "Using PHOENIX Library" of courses which provide Computer Assisted Instruction (CAI) on creation and maintenance of courses on the PHOENIX System. If you are interested in accessing the courses, please contact Claudia Lynch (AS04@NTSMUSIC) in the Computing Center for further information.

Using the SPSS^x MANOVA Procedure

By Scott Barber, Academic Computing Consultant (AC10@NTSMUSIC)

One of the statistical tools used frequently at NTSU is multivariate analysis of variance (MANOVA). There are MANOVA procedures provided by SPSS^x, SAS, and BMDP, but the series of articles begun here will deal primarily with the SPSS^x MANOVA procedure. I hope to clarify some of the problems which are commonly experienced, and furnish some guidelines with which to proceed when using this tool to explore your data. MANOVA analyzes differences in the means of multiple interval-level dependent variables. Its purpose is to explain differences on these variables across categorical "groups" or across the values of one or more interval-level "covariates." The specification of the MANOVA subcommands can be cumbersome if you aren't sure just what output you need. ("My professor said to do a MANOVA with these variables; what do I do?") To begin with, you should prepare your list of variables you want to analyze and organize them in the initial MANOVA command line.

Getting Started

A common MANOVA design could include the following: three dependent variables, one for each of three interrelated test results (e.g. RESULT1, RESULT2, AND RESULT3); two "factor" or "group" variables, one with two levels (e.g. SEX) and one with four (e.g. METHOD), and an interval level covariate (e.g. AGE). The first couple of lines of MANOVA code are easy enough to prepare. The syntax is:

MANOVA dependent varlist [BY factor list (min,max) [factor list...]]

(Parameters within "[]" are optional, capitalized words should appear just as they are.)

Using our example, the initial MANOVA command line would look like this:

MANOVA RESULT1 TO RESULT3 BY SEX(1,2) METHOD(1,4) WITH AGE1 TO AGE3

For this model, the RESULT variables are assumed to be interval level, and sex and method are categorical (nominal), and age (used here as a covariate) is also interval level. SPSS^X requires that the number of covariates be an integer multiple of the number of dependent variables. If the covariate is constant over all the dependent variables (assumed to be the case for AGE in this example), use the SPSS^X COMPUTE command before the MANOVA command to create "copies" of the covariate. For example:

COMPUTE AGE2 = AGE

Here, the effect of age on the RESULT scores is accounted for before the grouping variables are used to partition any variance.

When You Assume...

Unfortunately, when we assume that it's okay if our data don't meet the assumptions of the analytical tool, we can be easily made statistical "fools" (your children may read this...) by reporting seemingly significant probability levels as valid. Your first analyses, then, will involve some preliminary examination of the variables with which you are working to see if the assumptions for the procedure are adequately met. If they aren't, then another procedure would be more appropriate for your data. You will use the /PRINT subcommand under MANOVA to regulate the type and amount of output generated. A couple of other assumptions involved include a multivariate normal distribution of the dependent variables, and homogenous variance-covariance matrices for each level of the grouping variables. SPSS^X offers several plotting procedures to examine the distribution of each of the dependent variables for normality. These plots are obtained by specifying the /PLOT=NORMAL subcommand. There is not a comprehensive test for multivariate normality within SPSS^X, but the rejection of the normality of any of the dependent variables would also constitute a rejection of multivariate normality.

Of course, in order for any of the normality assumptions to make any sense, you must make reasonable efforts to assure that your dependent variables (and any variables you are using as covariates) are interval level. Beware of using ordinal variables such as individual 7- or 10-point scale item scores as dependent variables in a MANOVA. A commonly used solution to this problem (although the result is not truly an interval-level variable) is to COMPUTE a new variable comprised of several of these items added together. As long as this new variable represents a (theoretically intelligible) construct composed of these items, and the variable meets the assumptions already mentioned, it will serve your purposes without perpetrating a "major" violation.

There are also tests for the "homogenous dispersion matrices across groups" assumption, both for each dependent variable separately (Cochran's C and Bartlett-Box F) and for the variance-covariance matrix as a whole (Box's M). Access these tests by specifying:

/PRINT=HOMOGENEITY(COCHRAN BARTLETT BOXM)

Probability levels on these tests less than .05 imply rejection of the homogeneity assumption.

Note: Use of a second PRINT subcommand will override the first one, so always include multiple PRINT parameters with the same PRINT subcommand.

Looking for Significance

After ensuring that your data meet the "minimum guidelines" for the analysis, you can now begin to examine the data to see if the values differ across groups, or if most of the variance in the dependent variables is explained by covariates. The initial variable list provides the model which MANOVA will analyze, but this can be changed so as to analyze more than one model with one MANOVA specification. The /ANALYSIS subcommand can be used to exchange dependent variables with covariates, or delete dependent variables or covariates. For example, we could change the form of the design by inserting the following specification:

/ANALYSIS RESULT2 RESULT3 WITH AGE1 AGE2 RESULT1A RESULT1B

Similarly, the /DESIGN subcommand can be used to specify the structure of the model by adding or eliminating interaction terms, etc. The /DESIGN subcommand must always follow all subcommands for a

given model. A /DESIGN subcommand without a listing of factors or interactions will result in a full-factorial model with all main effects and all possible interactions included.

The next article will deal with analyzing repeated measures designs with SPSS^X MANOVA, and some tips on interpreting output from this procedure.

Working Papers on Personal Computers

By Robert G. Brookshire, Academic Computing Services Manager (BRKSHIRE@NTSUV1)

Academic Computing Services is pleased to announce the availability of a series of papers to aid faculty, staff, and students in understanding various issues relating to the use of personal computers. This series, entitled "Working Papers on Personal Computers," is composed of reprints of articles, conference presentations, and other documents developed by Computing Center staff. The following papers are available immediately:

- **Microcomputer Networks** – A nontechnical discussion of the various types of networking hardware and software available for microcomputers. Discusses Ethernet, IBM PC Network, IBM Token Ring, AppleTalk, Novell Netware, and other issues.
- **Microcomputer CPU Options** – Discusses the similarities and differences between the central processing units (CPUs) commonly used in microcomputers. Includes a discussion of the CPUs used in IBM new Personal System/2 series, the NTPC, and the Apple Macintosh series, as well as others.
- **Microcomputer Performance** – Compares the performance of 35 IBM-compatible personal computers using popular benchmarking programs.
- **Microcomputer Workstations** – Discusses the issues involved in configuring a microcomputer workstation for research. Three examples are shown, including low priced, medium priced, and high priced workstations.
- **Statistical Package Performance** – Compares the performance of popular statistical software for personal computers with statistical packages running on mainframe and minicomputers. Suggests when it is appropriate to conduct analysis in each environment.

Other papers are forthcoming. These papers may be obtained in the Computing Center reception area, ISB 119, between 8:00 a.m. and 5:00 p.m., Monday through Friday.

The ICPSR Summer Program

Once again, it is time to announce "The ICPSR Summer Program in Quantitative Methods of Social Research" sponsored by the Inter-University Consortium for Political and Social Research (ICPSR) at the University of Michigan. NTSU is a member of the Consortium, thereby making graduate students and faculty members eligible to attend the Summer Training Program. Graduate students can either take courses for credit or audit them. Faculty members will be considered Visiting Scholars.

The program is partitioned into two four-week sessions (June 29–July 24 & July 17–August 21), with instruction organized in lecture, seminar, and workshop formats. Additionally, special workshops are offered that provide participants with an opportunity to examine the impact of various methodologies on specific substantive issues and that address the practical objectives of providing technical support for computing specialists and data librarians. The courses, taught by instructors from institutions across the U.S. and Canada, include:

Basic Mathematics

Introduction to Statistics and Data Analysis I

Introduction to Statistics and Data Analysis II

Linear Models

Measurement and Design of Social Research

Mathematical Models: Game Theory

Formal Models of Social Systems

Causal Models

LISREL Models with Unmeasured Variables

Multilevel, Contextual, and Meta Analysis

Logit and Log-linear Models

Introduction to Computing

Mathematics for Social Scientists

Introduction to Regression Analysis

Scaling and Dimensional Analysis

Implications of Sample Design for Data Analysis

Mathematical Models: Rational Choice

Multivariate Statistical Methods

Categorical Data Analysis

Time Series Analysis

Pooled Time Series Analysis Models

LISREL Models

Network Analysis
 Latino Research Issues
 Methods of Population Estimation
 Quantitative Historical Analysis

Advanced Topics: Frontiers of Quantitative Methods
 Quantitative Analysis of Crime and Criminal Justice
 Methods of Population Projection
 American Electoral Research:
 Use of the National Election Studies

For more information, contact Bob Brookshire at the Computing Center (AS03@NTSMUSIC). He is the official NTSU ICPSR Representative and has brochures, posters, admission forms, etc.

MICROCOMPUTERS

Running SAS/PC Programs on CMS

By Panu Sittiwong, Academic Computing Consultant (AC09@NTSMUSIC)

One of the disadvantages of using SAS/PC is its limited number of statistical procedures available on the base module. For example, it does not contain any advanced statistical procedures such as Regression.¹ It is, however, possible for you to submit your SAS/PC program for execution on CMS using SAS/CMS. In addition to more complete statistical procedures, your program will execute faster.

In order to utilize SAS/CMS several things are required.

1. You must have a valid CMS userid with at least 2mb. of virtual memory. If you already have a valid CMS userid but have less than 2mb. of virtual memory, contact the Computing Center at 565-2324 and request more virtual memory on CMS.
2. You need to have a CMS link file for SAS/PC. To obtain this file you need to bring a formatted diskette to me at the Computing Center (ISB 119). This file needs to be installed with your SAS/PC program under the SAS sub-directory.
3. You need to modify the AUTOEXEC.SAS file on your PC to include the following statements:

```
OPTIONS REMOTE=ASYN;
FILENAME RLINK '\ SAS \ NTSUCMS.SCR';
```

Making a Link to CMS

Follow these steps to link your SAS/PC with SAS/CMS:

1. Check communication parameters in the NTSUCMS.SCR file with the SAS/PC program editor by issuing the command **INCLUDE '\ SAS \ NTSUCMS.SCR'**, and making any necessary changes. By default these parameters are set to 1200 baud, no parity, 1 stop bit, and 8 bits per character. Save the script file onto a disk and clear program editor area with the command **CLEAR**.
2. Develop your SAS program with the SAS/PC program editor.
3. At the command line of the program editor, issue the command **SIGNON**. SAS/PC will start to execute the link file.
4. When SAS/PC requests your sign-on ID, enter your CMS id in the form **Lidnn**, where **idnn** is your CMS userid. Enter your sign-on password when requested.
5. When a link is successfully established, you can submit your SAS program to CMS by issuing a **RSUBMIT** command.
6. After your program has executed, the output will be displayed in the output window on your PC. You can save this output to disk in the same manner as you do with SAS/PC.

7. You can end a session with CMS by issuing the **SIGNOFF** from the program editor window. SAS/PC will automatically log you off from CMS, disconnect your PC from the Local Area Network, and return you to your SAS/PC session.

¹ *EDITOR'S NOTE: The SAS/PC Advanced Statistics package should be available to qualified users in the very near future. Like the base product, we will have a site license for its distribution. Linking SAS/PC to CMS will still be desirable in many instances, however, due to the limitations of sample size and processing time for some types of data analyses.*

CSE: A Public Domain Editor for the TI Professional Computer

Scott Barber, Academic Computing Consultant (AC10@NTSMUSIC)

For some people, editing ASCII files on a PC can be a real problem. For those of you who have wished for a quick way to make some notes, write a program, or create or edit any ASCII text file (like AUTOEXEC.BAT or CONFIG.SYS) without having to load a large word processor like Wordstar or WordPerfect, or fighting with DOS's EDLIN to do what you want, there is now something for you.

Dan Smith from the Computing Center at the Colorado School of Mines has written an editor for the TI PC called CSE, which is fast and easy to learn for those quick editing tasks. It loads quickly and allows you to edit up to five files at a time, transfer text among those files and easily switch back and forth between them. You can set up macros to execute repetitive keystrokes automatically, and assign all editing and program functions to any of over 100 keystroke combinations.

This editor is NOT designed as a regular word processor, and so writing an article such as this one on CSE is a little tedious. For example, it does not have word wrap, and to move to another place in a line (that isn't the beginning or the end), you need to hold down the arrow key and watch the cursor float across the line.

However, if you compare it to EDLIN, CSE is an absolute joy, as it IS a full-screen editor, and does have some of the more useful features for doing many of the more commonly needed functions for editing ASCII files. I like it for examining and editing large ASCII documentation files, because I can go from one page to the next instantaneously (MUCH faster than WordPerfect on the TI).

There are two HELP screen pages which can be referred to with one keystroke, and the documentation is concise. Setting up the software on your TI to run from any subdirectory requires a PATH command to the directory with CSE.COM, and if you want to use the HELP or DOS SHELL, you also need to use the SET command (in an AUTOEXEC.BAT file) to tell DOS where the CSE.KEY and COMMAND.COM files are.

Once set up, this can be a very handy program to have on your system, and will let you forget about EDLIN forever. If you want a copy, simply leave a formatted diskette with the Computing Center secretary in ISB 119.

Newsletter Available for WordPerfect Users

By Scott Barber, Academic Computing Consultant (AC10@NTSMUSIC)

The WordPerfectionist is a newsletter designed to help WordPerfect users take advantage of its extensive power and flexibility. It is published independently by Wilkes Software Systems, Inc. for the WordPerfect Support Group and deals with the many various features of all WordPerfect brand software.

For both new and experienced WordPerfect users, this newsletter has much to offer. A recent issue describes several ways to use the Block function that are not immediately apparent from reading the manual.

For example, if the cursor is at the beginning of a sentence, you can easily block that sentence by entering an { ALT } F4 command and then a { . }. A block will be formed from the cursor location (the beginning of the sentence) to the next period (usually the sentence end).

The ability to define and execute macros is a feature which makes WordPerfect quite powerful. You can set up macros to easily insert the date and time in a document, to type "North Texas State University" and to automatically address envelopes from the letter text, each with one { ALT } keystroke. The newsletter is a good source of ideas for new macros and interesting ways to use this tool in your work.

Information on software updates, user surveys, and other support services is also available. To subscribe, contact the WordPerfect Support Group, P.O. Box 1577, Dept 204, Baltimore, MD 21203, or get an application from Sandy Franklin or Scott Barber in the Computing Center (565-2324).

WordPerfect Mailing Labels and Blank Lines

By Sandy Franklin, Office Automation Specialist

The WordPerfectionist, the official newsletter of the WordPerfect Support Group mentioned in the previous article, has the following suggestion as to how to handle blank fields that leave blank lines when merging to print labels.

WordPerfect will leave blank lines in the middle of labels. Unfortunately, if a record has no information in a field, a blank line is left where that information should print. This is sloppy at best, but with a clever macro, that line can be deleted automatically.

First, a way is needed to search for the blank line. The line itself contains only the [HRT] character. By only searching for a [HRT], the return at the end of all the other lines would also be found.

Instead, notice that between non-blank lines, the [HRT]'s are separated by at least one character while blank lines have two [HRT]'s in a row:

```

      xxx
(a)  xxxxx
      xx

```

```

(b)  xxx[HRT]xxxxx[HRT][HRT]xx[HPg]

```

Four lines: (a) normal, (b) reveal codes

This fact can be used to create a Macro (see below) to delete blank lines by searching for two [HRT] codes in a row.

DELBLANK Macro

We will call the macro DELBLANK. The steps to define the macro are:

1. Place the cursor at the beginning of the merged information by pressing { HOME } { HOME } { 1 }. Press [Macro Def] { CTRL } { F10 }, enter the name DELBLANK and press { RETURN }. The macro will be stored in the current directory on the default drive.
2. Press [→ Search] { F2 } followed by pressing { RETURN } { RETURN } and { ESC }. The cursor should position to the first label with a blank line. Press { Backspace } to delete the blank line. (Remember that pressing the { RETURN } key will result in a [HRT] in Revealed Codes).
3. To have this macro to repeat until no additional blanks are found, press [Macro] { ALT } { F10 } and enter DELBLANK (the macro's own name) and press { RETURN }. Turn the macro recorder off by pressing [Macro Def] { CTRL } { F10 } again.

To clean up the rest of the labels, press [Macro] { ALT } { F10 } and enter DELBLANK. This macro will repeat until the [HRT] [HRT] sequence cannot be found. Next, screen print the labels { SHIFT } { F7 }, 1

Version 2.4.2 Procomm Available

The Computing Center now has the Procomm communications software version 2.4.2 for distribution to NTSU faculty, staff, and students. This program is available through a site license with Datastorm Technologies, and allows us to distribute it to faculty, staff, and students free of charge for University use.

In addition to being available under this site license, Procomm has many features which make it one of the best communications available for IBM and compatible PCs. It supports VT-100, ANSI/BBS, and several other terminal modes. You can log on to MUSIC (line editor or full-screen), the VAXcluster, or COM-LETE.

Procomm can perform Kermit, XMODEM, YMODEM, windowed XMODEM, Telink and other protocol file transfers. The menu-driven interface to the software is fairly easy to learn and use. If you have a working knowledge of microcomputer communications, you can have Procomm up and running almost immediately. To obtain a copy of Procomm, simply leave a formatted floppy diskette with the Computing Center Receptionists in ISB 119. You should be able to pick up the Procomm diskette within 24 hours.

VAXEN

Using GMAIL on the VAXcluster

By James Shoffit, VAX Operator (JAMES@NTSUVAXA)

What GMAIL Is

GMAIL is a utility, implemented by a DCL command file, designed primarily to support the SENDING of mail messages to nodes on networks other than those directly supported by VMS MAIL and its JNET extension for BITNET. The user interface for GMAIL is patterned closely after the sending functions of VMS MAIL. GMAIL fully supports address lists and distribution files, and can handle a mix of 'foreign-network' addresses together with addresses which can be handled by VMS MAIL. GMAIL invokes VMS MAIL to deal with those addresses which are VMS MAIL addresses.

The address syntax that GMAIL supports for 'foreign-network' addresses is most often in the form "user@host.domain", for instance, "USERX@NODEY.ARPA". Such mail is handled by combining your letter with a suitable header, and sending it (using a form of the JNET SEND/FILE command or equivalent) via BITNET to a "gateway" node, from where it is forwarded to its ultimate destination.

Example :

To send a mail message to user "ron" on the Research Vax (node "ntvax" on the UUCP network) you would do the following :

```
$ GMAIL
gMail) SEND
gTo:   ron@ntvax.UUCP
%gMAIL-I-ADDR, gMail address: 'PSUUCP%"ron@ntvax.UUCP"'
gSubj: testing out GMAIL gEnter your message below.
Press CTRL/Z when complete or CTRL/C to quit.
This is a letter to user ron. Good bye. ↑ Z
%gMAIL-I-SEND, sending via gateway PSUUCP to "ron@ntvax.UUCP"
gMail) EXIT
```

This will send the file to the gateway between the BITNET and UUCP systems at node PSUUCP on BITNET. From there, it will be sent to the research vax. A letter sent through a gateway will often take overnight to arrive at its destination.

What GMAIL Isn't

GMAIL is NOT fully integrated with VMS MAIL (for instance, in the manner of the 'JNET%' protocol supplied by Joiner Associates to support BITNET mail within the framework of VMS MAIL). As a consequence, you CANNOT give these 'foreign' addresses to VMS MAIL—either directly or indirectly (e.g., as a VMS MAIL forwarding address). Also, you cannot use VMS MAIL directly to REPLY or FORWARD to

such a foreign address (but GMAIL DOES offer a fairly simple way to REPLY or FORWARD with a short series of MAIL and GMAIL commands.) Since GMAIL is implemented with DCL, it is NOT blazingly fast.

Some Features of GMAIL

- Includes a comprehensive HELP file.
- GMAIL supports many gateways (see GMAIL HELP topic 'Gateways') and it is fairly easy to add additional gateways (in most cases) by defining appropriate logical names. Routing to gateways often is determined by the 'domains' in an address, rather than being explicit.
- GMAIL fully supports all address-specification forms (logical names, lists, distribution files) of VMS MAIL (see topic 'Addresses General').
- GMAIL supports many of the 'sending' qualifiers of VMS MAIL: /EDIT, /EXTRACT, /LAST, /SELF-COPY (see under topics SEND and REPLY).
- GMAIL can be used as a method of REPLYing to foreign-mail received by VMS MAIL (see topic 'REPLY_TO.\$') and FORWARDing to foreign addresses mail received by VMS MAIL (see topic 'FORWARD.\$').
- GMAIL can check letters for unsuitable formats for BITNET (see topic 'SEND /CHKLETTER').
- GMAIL supports both 'command' mode and 'DCL' mode, in analogy with VMS MAIL (see topics 'GMAIL' and 'Modes').
- GMAIL can include a 'Personal Name' in the mail header (see topic 'Flags.Modifiers PERSONAL_NAME').
- GMAIL can include a 'signature' file with letters (see topic 'SEND /SIGNATURE').
- GMAIL has a 'test' mode, where no letter is actually sent (see topic 'SEND /TESTMODE') and the option of preserving 'work' files, so that you can see what was (or would have been) sent (see topic 'SEND /DELETEFILES').
- GMAIL provides for optional inclusion of a distribution list with letter text (see subtopics '/DISLIST' and '/DISFILE' under topic 'SEND'). '\$DCL_command').

VAX Terminals in the 5th Floor GAB Lab

By Billy Barron (BILLY@NTSUVAXB)

The VAX terminals in the 5th floor lab no longer use the LAN. Instead they are connected to the VAX through Ethernet. The change is mostly transparent to the user. These terminals now communicate at 19200 baud.

When you sit down you should see the following prompt:

Local) (this is called the local prompt).

To get on the VAX Cluster type:

Local) CONNECT (CONNECT can be abbreviated as C)

or

Local) CONNECT DEC

This will automatically take you to the LEAST busy VAX. This is the best way to get fast response time.

If you have a reason to get on a specific VAX you can type:

Local) CONNECT VAXA

or

Local) CONNECT VAXB

Remember to still type LOGOUT to get off the VAX.

Soon these terminals will also be able to connect to the NBI (a UNIX machine in the Research VAX area) and the Research VAX.

OPERATIONS

Disk Backup Schedules

Backup Schedule for OS/MVS

OS/MVS disk packs (academic and administrative) are backed up daily, Tuesday through Saturday, from 4-6:30 a.m., and Sunday from Midnight to 3 a.m. A backup of all the operating systems on the NAS CPU and their contents is done once every two weeks at some low activity period over a weekend.

MUSIC/SP Backup Hours

A message will be sent to all users signed on to MUSIC/SP approximately 10 minutes before backups are begun. It will be in the form **** MUSIC SHUT DOWN AT xxxx AM - SCHEDULED BACKUP ****. To find out the backup hours while signed on to MUSIC/SP, enter **HELP HOURS**. The following backup schedule is currently in effect:

Tuesday	3 a.m. (for about 3 hours)	Weekly backup
Wednesday - Saturday	4 a.m. (for about 2 hours)	Daily backup
Saturday	Midnight (for about 2 hours)	Daily backup

PHOENIX Backup Schedule

PHOENIX is backed up weekly on Sunday night. The backup begins at midnight and lasts for approximately 30 minutes.

VAX Backup Schedule

Incremental backups of both VAX systems are performed Monday through Friday at 6 p.m. Users do not have to log-off, but any files that are open at the time of the backup will NOT be backed up.

Full backups of both systems are done every Friday beginning at 8 a.m. These generally will take all day to complete. Again, users do not have to log-off, but any files that are open will not be backed up.

A "Stand Alone" backup of the system disk is done once every two months. This procedure makes a copy of the system disk that can be used to restore its contents if the disk is completely destroyed. The system will be shut down; watch the system log-on message for specific times and dates.

NOTE: No backups are taken on the weekends. Requests for restoration of files should be made via MAIL to the username OPERATOR. Your file can only be restored if it existed before the last backup was done.

NAS/8083 Dual Processor Performance Statistics for March

CPU	SYSTEM	Scheduled Operating Hours	Planned Maint. Hours	Planned Production Hours	Unplanned Maint. Hours	Production Hours Achieved	System Uptime
ACAD	VM/SP3	744	0.00	744.00	14.94	729.06	98.0%
ACAD	MUSIC/SP	744	37.39	706.58	20.88	685.73	97.0%
ACAD	MVS/JES2	744	0.00	744.00	17.20	726.80	97.7%
ACAD	COMPLETA	744	0.00	744.00	26.85	717.15	96.4%
ADMN	MVS/JES2	744	0.00	744.00	3.31	740.09	99.5%
ADMN	COMPLETA	229	0.00	229.00	1.68	227.32	99.3%
ADMN	ADABASA	744	17.11	726.89	5.81	721.08	99.2%

System Uptime=(Production Hrs. Achieved)/(Planned Production Hrs.)

Production Hrs. Achieved = (Planned Production)-(Unplanned Maint.)

Scheduled Operating Hrs. = (Planned Maint.) + (Planned Production)

BENCHMARKS

APRIL, 1987

MUSIC/SP Planned Maintenance Hours include 24.67 hours for system backup and 12.72 hours for VM/SP3 system backup.

ADABASA'S Planned Maintenance Hours include 17.11 Hrs. for system backup.

The ACAD CPU achieved 98.5% uptime; the NAS/7360 DASD achieved 100% uptime; the NAS/7380 DASD achieved 100% uptime. The ADMN CPU achieved 100% uptime; the NAS/7360 DASD achieved 100% uptime; the NAS/7380 DASD achieved 100% uptime.

Lost productivity is calculated as the greatest amount of elapsed time that any one of the production systems was unavailable for scheduled operation. Lost productivity hours were contributed to by the following key causes:

ACAD CPU:

CPU, Tape, and Disk Subsystems (NAS)

- | | |
|---|-------------|
| 1. Service processor failing to read floppy disk. | 10.17 HOURS |
| 2. Corrective maintenance to resolve PHOENIX and SAS software failures as result of NAS F.E. entering incorrect ACAD CPU Serial Number. | 2.17 |

TOTAL 12.34 HOURS

Miscellaneous

- | | |
|---|------------|
| 1. Undetermined causes for systems restarts. | 2.68 |
| 2. Operator missed step in Restart Procedure. | 2.75 |
| 3. COMPLETA System failures. | 8.65 |
| 4. VM/SP3 System Tuning/Improvements. | 0.35 |
| 5. MVS/JES2 System Tuning/Improvements. | 0.34 HOURS |
| 6. MUSIC/SP System Tuning/Improvements. | 0.35 |
| 7. MUSIC/SP Weekly Backup failure. | 1.25 |

TOTAL 18.62 HOURS

GRAND TOTAL FOR ACAD 30.96 HOURS

ADMN CPU:

CPU, TAPE, and Disk Subsystems (NAS)

- | | |
|---|------------|
| 1. Powered down ADMN CPU for Service Processor maintenance on the ACAD CPU. | 1.58 HOURS |
|---|------------|

Miscellaneous

- | | |
|---|------|
| 1. Undetermined causes for systems restarts. | 0.87 |
| 2. Power failure in ISB caused BYMPX 0 to fail. | 1.75 |
| 3. MVS/JES2 System Tuning/Improvements. | 1.83 |
| 4. COMPLETA System Failure. | 0.20 |
| 5. COMPLETA System down to process single jobs. | 0.50 |

TOTAL 5.15 HOURS

GRAND TOTAL 5.73 HOURS

TECHNICAL SUPPORT

ACADemic (NAS) Program Hit Parade *

The following programs were used the most frequently on the NAS CPU during the month of March.

MARCH TOP TEN PROGRAMS IN TERMS OF FREQUENCY OF RUNS

Program	Description	Number of Runs	Percent of Total
1. IEWL	Linkage Editor	14652	17.0
2. IKFCBL00	VS COBOL Compiler	13814	16.0
3. PGM=*.DD	Compiled Program	13576	15.7
4. IEBGENER	IBM Utility	8480	9.8
5. SCRIPT	Waterloo/SCRIPT	6058	7.0
6. PTPCH	Dataset Lister	4579	5.3
7. SASLPA	SAS	3870	4.5
8. SPSSX	SPSSX	3852	4.5
9. IEFBR14	IBM Null Utility	3449	4.0
10. IEV90	Assembler H	3436	4.0

MARCH TOP TEN PROGRAMS IN TERMS OF CPU SECONDS USED

Program	Description	CPU Seconds	Percent of Total
1. PGM=*.DD	Compiled Program	28919	22.2
2. SASLPA	SAS	26000	20.0
3. SPSSX	SPSS-X	15648	12.0
4. IKFCBL00	VS COBOL Compiler	15206	11.7
5. SCRIPT	Waterloo/SCRIPT	12490	9.6
6. DAG01	User Program	7505	5.8
7. PTPCH	Dataset Lister	6745	5.2
8. IEWL	Linkage Editor	3160	2.4
9. IEV90	Assembler H	2718	2.1
10. IEBGENER	IBM Utility	1674	1.3

* ACAD is the official designation of the part of the NAS/8088 CPU that is dedicated to faculty and student use. The portion of the computer reserved for University administrative purposes is termed ADMN.

INFORMATION SYSTEMS

Information Systems News

By Douglas Heruska, Documentation Specialist

New ID Request Forms

New Computing Center ID request forms and instructions will be mailed to all departments during the month of May. Two different forms will be used (instead of one) starting June 1, 1987. The new separate forms will designate whether the request is for a new ID or for a change to an existing User-ID. FORM F-020-01 (Blue paper) will be used only when an individual, instructor, or student is requesting a NEW ID to be added to the NTSU Computing environment. FORM F-020-02 (Pink paper), becomes the form to MODIFY, RENEW, or DELETE an existing ID.

The new forms should speed up processing and eliminate the confusion created with the current form. Instructions for the forms will be mailed with sufficient copies of the forms to meet a department's needs for several months. If you have not received the new forms and instructions by June 1 or require additional copies, contact the Computing Center at 565-2324 to obtain some.

Starting with the First Summer Session, no old forms will be accepted for changes or initial IDs. If an old form is sent to the Computing Center for processing after June 1, it will be returned to the individual with a copy of the correct form and instruction.

New Systems

Two new Systems were purchased for the Computing Center this Semester. Super-Natural and Natural Connection were acquired in March and are now being installed and tested. These two products should enhance the Computing environment for both the Academic and Administrative Users. Watch this space for further news on the availability and capabilities of this software.

Get a "Subscription" to *Benchmarks*

Benchmarks is a vital link between the NTSU Computing Center and the users of our facilities. It is important for all users of the computing facilities to maintain a file of these newsletters because they contain materials which will periodically update existing documents as well as information and suggestions on uses of OS/MVS, MUSIC/SP, the VAXcluster, Microcomputers, and other resources available to NTSU students and faculty. To facilitate the dispersal of *Benchmarks*, ***** FREE ***** subscriptions are available. To receive yours, send the following information to us either by "snail mail" (the post office or campus mail) or electronically, to the User-ID AS04 on MUSIC, VMS, or CMS.

Name _____

Mailing Address _____

PLEASE GIVE A CAMPUS ADDRESS (NOT BOX) IF POSSIBLE! - It's Cheaper !!

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